



Right Hand Drive

MODEL "A"

INSTRUCTION BOOK





Right Hand Drive

Ford Motor Company of Aust. Pty. Ltd.
(Incorporated in Victoria)

Head Office: Geelong, Victoria

SPECIFICATIONS AND LICENSE DATA

Engine	Type of engine	4 cylinder
	Stroke	3 7/8 inch
	Cylinder bore	4 1/4 inch
	Horse Power	(R.A.C. rating) 24.03.

ENGINE NUMBER

The engine number is stamped on the left side of the cylinder block just above the cylinder inlet connection. The engine number is also the serial number of the car.

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A Message to Every Ford Owner

Your automobile is something like a miniature city. There is an electric light and power system, a water system, a fuel system.

In the New Ford, you will find each of these systems of the latest design and built of the best material. Every part has been made to serve you faithfully and well.

But every car made will run better and longer if given proper care.

The first few hundred miles are especially important because that is when the mechanism of your car is being run in. Proper attention during this period will lengthen its life and prevent unnecessary trouble later on.

We are particularly interested in this matter because we believe it our duty not only to make a good automobile, but to help the owner get the greatest possible use over the longest period of time at a minimum of trouble and expense.

The entire Ford dealer organisation has been specially trained and equipped to service the new Model A car.

An inspection or checking-up of important points at regular intervals costs very little, but it has a great bearing on the life and continued good performance of your car.

This booklet has been prepared to give you information about the construction and operation of the Model A Ford Car, so that you will derive from it the utmost in motoring satisfaction and efficient, economical transportation.

The Car and its Operation

Filling the Radiator.

Always be sure that the Radiator is filled with clean water, as the proper cooling of the engine depends upon the water supply. The cooling system holds 2½ imperial gallons.

In freezing weather use an anti-freeze solution, procurable from any Ford Dealer. (See Cooling System, page 25.)

Proper Oil Level.

Always be sure that there is a sufficient supply of high grade medium engine oil in the engine. Four quarts of oil is the amount required.

To determine the correct oil level, use the indicator on the left side of the engine just to the rear of the Breather Pipe (See Fig. 2). Pull out the indicator rod, wipe it off, reinsert the rod (being sure that it goes all the way down) and again remove it.

The mark made by the oil on the rod indicates the oil level. When the oil reaches the point marked "F" on the indicator, it is at the proper level. Under no circumstances should the oil level be permitted to get below the point marked "L." ANY ATTEMPT TO RUN THE ENGINE WITH TOO LITTLE OIL WILL CAUSE SERIOUS DAMAGE. When replacing the

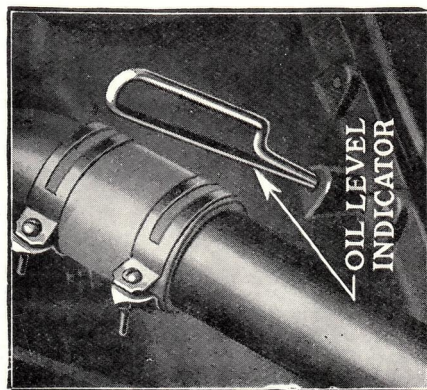


Figure 2

oil level indicator, see that both the short and long ends of the rod enter the opening in the Crank Case. (See Fig. 2.) Failure to insert both ends permits oil to leak out.

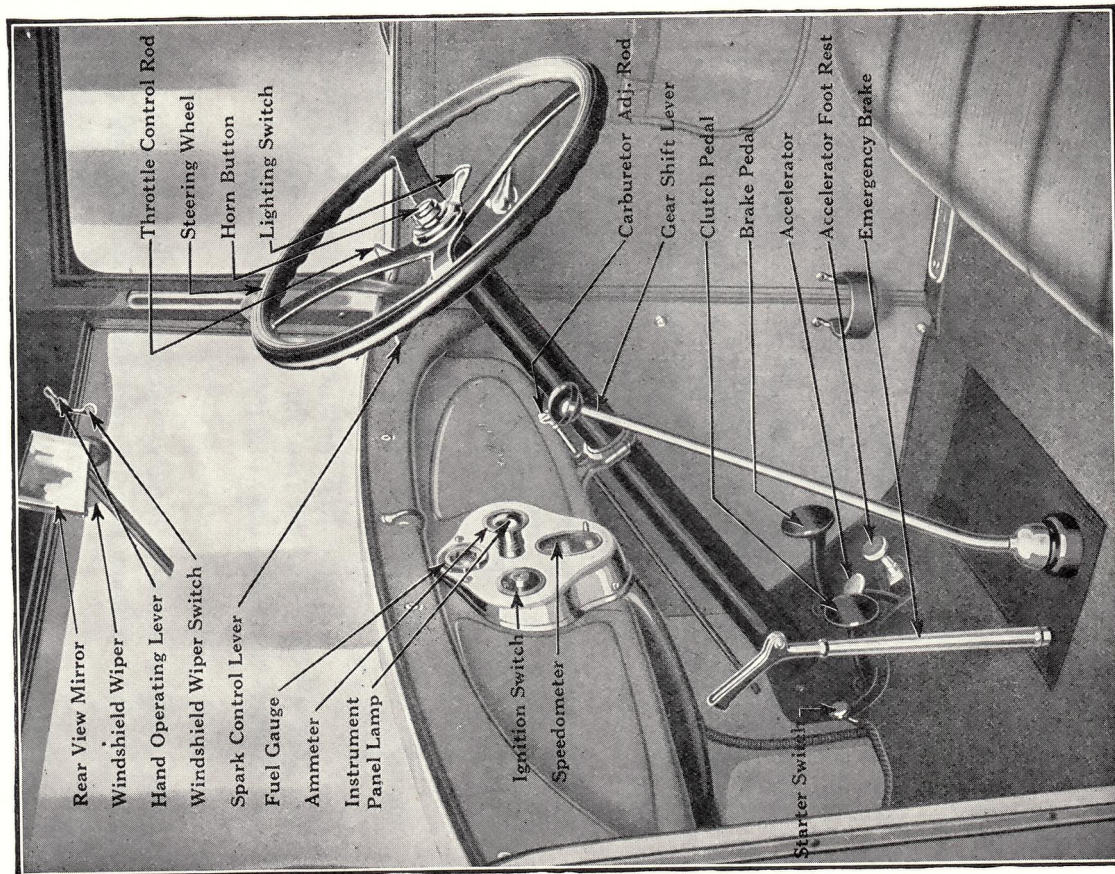


Figure 1
Instruments and Control Panel

If there is not enough oil, more should be added through the breather pipe located at the left side of the engine. Note: When filling the oil pan through the Breather Pipe, leave the oil indicator out. This permits air to come out through the indicator hole, eliminating back pressure in the Crank Case. Be sure to replace the indicator. (See Lubrication System, page 29.)

Filling the Fuel Tank.

The fuel tank is filled through the opening conveniently located on the Cowl. The tank has a capacity of nine imperial gallons. The gauge on the Instrument Panel registers the amount of fuel in the tank. (See Fuel System, page 35.)

STARTING THE ENGINE.

Placing Gear Shift Lever at "Neutral."

Be sure the Gear Shift Lever is placed at the position in which it can be moved freely from side to side. This is called the neutral position. (See Fig. 3.)

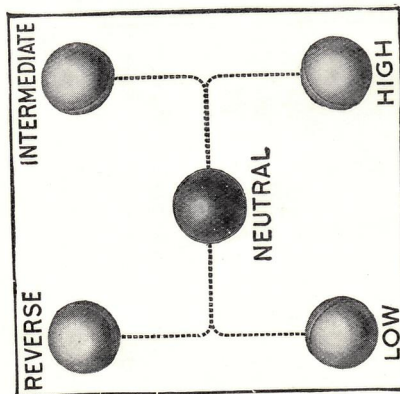


Figure 3

Gear Shift Lever Positions

Throttle Lever or Accelerator controls the amount of fuel entering the engine, regulating its power and speed.

Fully Retard Spark Lever.

The left hand lever under the Steering Wheel controls the spark timing. It must be placed at the top of the quadrant for

starting the engine, otherwise an early firing of the gases in the cylinder will cause the engine to kick-back, damaging the Starter Drive.

Insert Key and Unlock Ignition.

Insert the Ignition Switch Key in the lock and turn to the right. This allows the Cylinder of the Switch to come out approximately $\frac{1}{4}$ in., connecting the Ignition Circuit. The Ignition Lock is a combination Switch and Lock, and affords full protection not only in the lock itself, but by enclosing the Ignition Wire leading to the distributor in a double metal cable. This lock meets the exacting requirements of the underwriters in regard to theft insurance. When the Switch is unlocked the key may be removed.

Open Dash Carburettor Adjustment.

Turn the Carburettor Adjustment one-half to three-quarters of a turn to the left if the engine is cold. This gives a rich fuel mixture for starting. Note.—If the engine is well warmed up, it will not be necessary to open the adjustment more than for normal operation.

Pull Primer Upward and Press Starter Button.

The Carburettor Adjusting Rod serves also as a choke. Pull this rod upwards all the way (if the engine is cold), at the same time pressing the starter button with the foot. Note.—If the engine is hot, it should not require priming.

When Engine Starts.

The instant the engine starts remove foot from the Starter Button, and release the Choke Rod. Do not hold the Choke Rod up too long as the Cylinders will become flooded, causing the engine to stop. Should this happen, turn the engine over several times with the starter, leaving the Choke Rod in. This should be sufficient to clear the excess fuel from the Cylinders, after which the engine can be started as described.

With the engine running, advance the Spark Lever about half-way down the quadrant, or to the best operating position. Close the Throttle by pushing the right hand Lever upward until the engine is turning over at the proper idling speed. When the engine becomes warm, turn the Carburettor Adjustment to its normal position (about half turn open).

DO NOT RACE THE ENGINE WHEN RUNNING FREE.

To Stop the Engine.

To stop the engine simply push in on the barrel of the lock until it snaps back into its locked position. This disconnects the ignition circuit and locks it. When locked all parts of the distributor are grounded.

Note.—MAKE SURE THAT THE BARREL OF THE LOCK IS IN WHEN THE ENGINE IS STOPPED, OTHERWISE THE BATTERY MAY BE DISCHARGED.

Starting the Car

Start the engine as above described.

Release the Hand Brake.

When the car is on level ground the Hand Brake should be released first. If the car is on a slope, the Hand Brake should not be released until the moment the clutch is engaged.

Disengage the Clutch.

Disengage the clutch by pressing the left foot pedal all the way down.

Move the Gear Shift Lever to Low.

With the clutch disengaged, move the Gear Shift Lever to the left and back into low speed position. (See Fig. 3.) Should the lever not come back move again to neutral and release the clutch, starting over again as above described. Releasing the clutch causes the gears to spin to a position where they will mesh properly.

Engage Clutch Gradually the Same Time Slightly Accelerating Engine.

With the Gear Shift Lever properly engaged in low speed, gradually allow the Clutch Pedal to come back to engaged position, at the same time slightly increasing the engine speed by pressing on the accelerator pedal. This operation causes the car to move forward in low gear.

Accelerate to 5 to 8 Miles per Hour.

As the car gathers momentum gradually press the accelerator until the car reaches a speed of from five to eight miles per hour. Then engage second or intermediate gear as follows:

Release Pressure from Accelerator and Disengage Clutch.

Releasing the pressure from the accelerator allows the engine to slow down so the Transmission Gears may mesh without noise. Press the Clutch Pedal all the way down.

Move Gear Shift Lever to Intermediate.

To shift to intermediate, move the lever forward to neutral, through the neutral to the right, and on forward into intermediate. An easy method for this is to place the hand on the Gear Shift Lever, and press to the right and forward. The pressure to the right will carry the lever through neutral.

Engage Clutch and Accelerate to From 12 to 15 Miles per Hour.

The momentum of the car allows a more rapid engagement of the clutch than when moving away from a standstill. Accelerate to from 12 to 15 miles per hour and engage high gear as follows:

Remove Foot from Accelerator and Disengage Clutch

Again press the clutch all the way down.

Move Gear Shift Lever to High

This move is straight back to intermediate. Do not jerk the lever. A firm deliberate movement will achieve best results. A momentary pause as the lever passes neutral will ensure a silent shift. With a little practice the timing of the shifting operation will become automatic.

Engage Clutch

With the clutch engaged, the speed of the car is regulated by pressing on the accelerator.

To Stop Car

Remove the foot from the accelerator and press gradually on the right hand or Brake Pedal. When the engine has slowed down to practically idling speed, release the clutch and bring the car to a full stop with the brakes. Keep the clutch disengaged until the Gear Shift Lever has been moved to neutral position.

Except in emergencies where sudden stops are necessary, the car should always be brought to a stop gradually.

New drivers should spend considerable time familiarizing themselves with shifting gears and stopping the car, so that these operations become automatic, the natural thing to do in case of emergency.

When the Brake Pedal is depressed, the stop light at the rear of the car is turned on by a small switch under the floor board, controlled by the Brake Pedal movement.

Driving the Car

The various speeds required for average road conditions are obtained by varying the pressure on the accelerator. Practically all running speeds are obtained in high gear. The low and second gears are used principally for giving momentum in starting and when the engine is subjected to a heavy load such as in deep sand or on steep hills.

To Reverse the Car

Before attempting to engage the Reverse Gear, bring the car to a full stop. To shift into Reverse Gear, proceed as in low, except that the Gear Shift Lever is moved to the left and forward.

To Shift from High to Intermediate Gear

It should not be necessary to shift to intermediate gear at speeds of 15 miles per hour or more. Release the clutch, move Gear Shift Lever quickly into intermediate and engage clutch. Do not hesitate passing neutral.

Spark Control

For average operation the Spark Lever should be about half way down the quadrant. The spark should be advanced (pulled down), as the speed of the car increases, and retarded (pushed up) when the speed decreases. The spark advanced too far will cause a sharp "ping" or knock when a heavy load is placed on the engine. It will also cause an uneven jerking when the car is running slowly in high gear. When the spark is too far retarded, the engine will be sluggish in operation. Familiarity with the proper positions of the Spark Lever for most satisfactory performance will soon be acquired from observing their effects.

Do Not Rest Foot on Clutch Pedal

Do not make a practice of resting the foot on the Clutch Pedal while driving, as this may cause the clutch to slip and unnecessarily wear the facings on the disc.

Descending a Hill

When descending long grades, have the transmission in gear, the clutch engaged and the ignition on. This allows the engine to turn over against compression and act as brake. On

steep grades the car should be in intermediate gear before the descent is started. On exceptionally steep grades low speed should be used. This increases the braking action of the engine.

Always have the Ignition Switch on when descending an incline. Shutting off the switch allows raw fuel to be drawn into the cylinders, which washes the lubricant from the cylinder walls. Also, unexploded gas collects in the muffler and when the switch is again turned on there is a possibility of blowing out the muffler.

Parking

When parking in a limited space, swing the car in towards the opening, then out to about one-half car length ahead, and back in.

Safe Driving

Brakes

The most essential point in connection with safe driving is the condition of the brakes. Keep them adjusted and apply them properly when coming to a stop. Apply the brakes gradually, without disengaging the clutch. This allows the engine to act as a brake. Just before coming to a stop the clutch may be released and the brakes applied firmly. This method lessens the tendency to skid or to lock the wheels.

Steering Gear

Examine the Steering Gear and Front Axle frequently as these units, if out of proper adjustment, make control difficult.

Lights

Make certain that your lights conform with the law. (See pages 44-45.) It is a good plan to carry spare Head and Tail Light Bulbs at all times.

On the Highway

Give undivided attention to your driving. In passing traffic be sure there is a place for you in the line ahead.

When other vehicles try to pass you, let them pass.

Always signal before you slow down, stop, or change your course.

Never back up before ascertaining that the road behind is cleared.

Railway Crossings and Main Streets

In entering main streets or highways, or in approaching a railway crossing where a full view of the track is obscured, stop and look.

Left and Right Turns

Before reaching a corner where a right turn is to be made, pull over near the centre of the road and signal the direction of your turn so that the drivers following may have your intentions and set their course accordingly.

In making left turns, pull to the left hand side of the road and turn without signalling.

Always allow sufficient time so that other drivers will not be endangered.

Street Cars

Stop the proper distance behind a street car taking on or discharging passengers.

Carbon Monoxide Gas is Deadly

DO NOT RUN YOUR ENGINE IN A GARAGE WITHOUT TWO DOORS OR WINDOWS WIDE OPEN.

Schools

You should be especially careful and drive slowly while in the neighbourhood of a School. Approximately 31 per cent. of the people injured by motor cars are children.

In Case of Accident

Any accident, regardless of seriousness, should be reported to the Police Department as soon as possible. The following particulars should be obtained at once:—

- (a) Name, sex, age, address of injured persons, and other driver.
- (b) Name and address of witness.
- (c) License Number of other car involved.
- (d) Exact location of accident.
- (e) Date and time.
- (f) Weather conditions (rain, snow, clear, dark, etc.).
- (g) Conditions of street.
- (h) Nature and extent of accident—damage to other car as well as your own.
- (i) Circumstances of accident (speed and direction of vehicle involved). Horns properly used, etc.
- (j) Whose fault.
- (k) Pencil sketch showing as much detail as possible.

Caring for the Car

Your car will give you best satisfaction if you give it proper care. These are the main points of maintenance. The best way to care for your car is to have your Ford Dealer check it over at regular intervals.

Lubrication

Careful attention to lubrication is of the utmost importance. The chart on pages 30 and 31 and the section on page 29 explain how and when your car should be lubricated.

Tyres

Keep tyres inflated to 35 pounds at all times. Under-inflation causes more trouble than anything else.

Avoid rubbing tyres on the curbs.

Caring for Battery

Every two weeks check the electrolyte in the battery to see that it is at the proper level. The solution (electrolyte) should be maintained at a level with the bottom of the filling tube. If below this point, add distilled water until the electrolyte reaches the proper level. Water for battery use should be kept in clean, covered vessels of glass, china, rubber or lead. In cold weather add water only immediately before running the engine so that the charging will mix the water and electrolyte and prevent freezing. Access to the battery is easily gained by removing a small plate located in the floor board in front of the driver's seat.

Keep the battery filling plugs and connections tight, and the top of the battery clean. Wiping the battery with a rag moistened with ammonia will counteract the effect of any of the solution which may be on the outside of the battery. A coating of vaseline will protect the terminals from corrosion. It is of vital importance that the battery is firmly secured in its supporting brackets at all times. If the clamps are loose, the battery will shift about in the compartment, resulting in loose connections, broken cells and other trouble.

To remove the battery from the car it will be necessary to take out the floor boards. **WHEN REPLACING THE**

BATTERY IN THE CAR BE SURE TO INSTALL IT WITH THE POSITIVE TERMINAL GROUNDED TO THE FRAME AS SHOWN IN FIG. 13.

When repairs are necessary or if the car is to be laid up for the winter take the battery to a Ford Dealer for proper attention and storage. Do not trust your battery to inexperienced or unskilled hands. (See Electrical System, page 39.)

The Generator Charging Rate

The Generator charging rate is shown on the Ammeter on the Instrument Panel. During cold months the charging rate should be 12 amperes; in the summer this rate should be cut down to 8 amperes. The rate can, of course, be increased or decreased to meet individual requirements. For example, the owner who takes long daylight trips could cut the charging rate down even less. On the other hand, the owner who makes numerous stops, should increase the normal rate if his battery runs down.

Keep Bolts Tight

All bolts and nuts should be gone over periodically and tightened.

The Proper Way to Wash the Car

Always use cold or lukewarm—never hot—water. If a hose is used don't turn the water on at full force as this drives the dirt into the finish. After the surplus mud and grime have been washed off, take a sponge and clean the body and running gear with a solution of water and linseed oil soap. Rinse off with cold water; then rub and polish the body with a damp chamois skin. A body polish of good quality may be used to add lustre to the car. Grease on the running gear may be removed with a petrol soaked sponge or rag. The nickel parts should be polished with a good nickel polish. Genuine Ford body polish and nickel polish can be purchased from any Ford Dealer.

Should the body or other pyroxylin finished parts of the car become spattered with tar or other substance used on roads, the spots can be removed with a solution of 2/3 petrol

and 1/3 engine oil. Dip a soft cloth into the mixture and, using one finger, rub the spot gently until it has been removed. The rubbed spot should then be washed off with clear water.

Care of the Top

When putting down the top of open models be careful in folding to see that the fabric is not pinched between the bows, as they will chafe a hole through the top. Applying good top dressing will greatly improve the appearance of an old top on either an open or closed car.

Storing the Car

Store the car in a dry place.

Drain the water from the Radiator, then put in about a quart of anti-freeze solution to prevent freezing of any water that may possibly remain. Drain the old oil from the oil pan. Refill the oil pan with one gallon of fresh oil and run the engine enough to cover the different parts with oil. Draw off all gasoline. Remove the tyres and store them. (See paragraph on "Care of Tyres When Car is Stored," page 52.) Remove battery and place in storage (see paragraph on battery, page 19). Wash the car and cover the body with a sheet of muslin to protect the finish.

The Steering Gear

The model "A" steering gear (see Fig. 4) is of the three-quarter irreversible worm and sector type. By this we mean that the front wheels can be turned with little effort from the steering wheel, and while the front wheels will endeavor to follow a straight line ahead, due to axle construction, little or no road shock can be transmitted to the steering wheel from the wheels.

The steering column being of the one-piece design requires little attention except to see that it is regularly lubricated and occasionally adjusted.

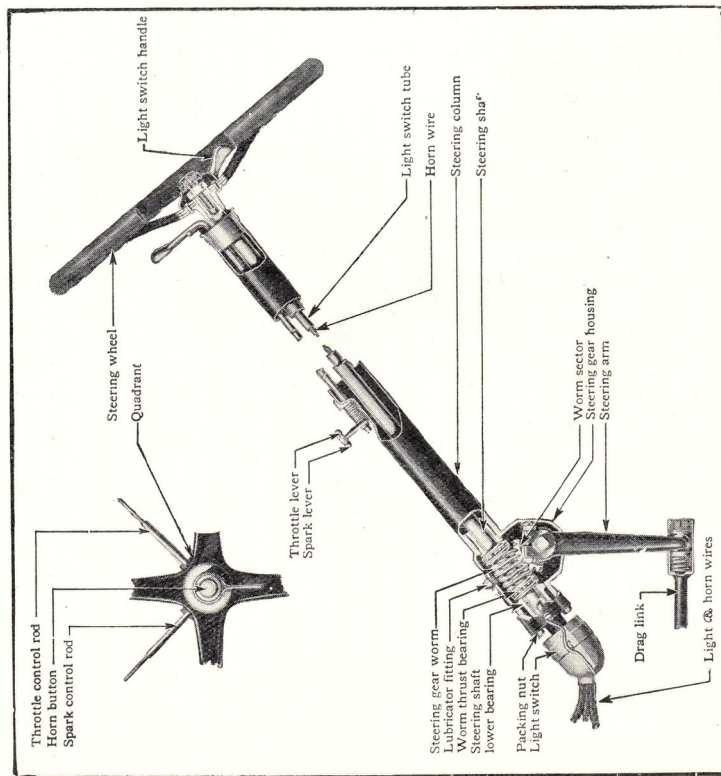


Figure 4
Steering Gear

Avoid turning the wheels while the car is at a standstill as much as possible, as this places additional strain on the steering gear and causes excessive wear on the tyres.

Maintenance of Steering Gear

The housing which contains the worm and sector holds a supply of the same semi-fluid gear oil as is used in the rear axle and transmission. This should be changed to a lighter grade just before the cold weather sets in; and again, to a heavier grade for the warmer season. Oil should be added every two thousand miles.

The bearing at the top of the steering column under the steering wheel is an oil-less bearing and requires no lubricant.

Adjustment

Any excessive free travel or play of the steering wheel is adjusted by removing the brass shims placed between the lower end of the steering column and the steering shaft lower bearing assembly. Remove only sufficient shims to allow about one inch free travel of steering wheel. Never enough to cause it to bind, or make it hard to turn.

If steering wheel tightens up more than normal with use or the car develops a tendency to wander, the trouble will most likely be found to be the lack of lubrication in the spindle body bushing and the ball joints.

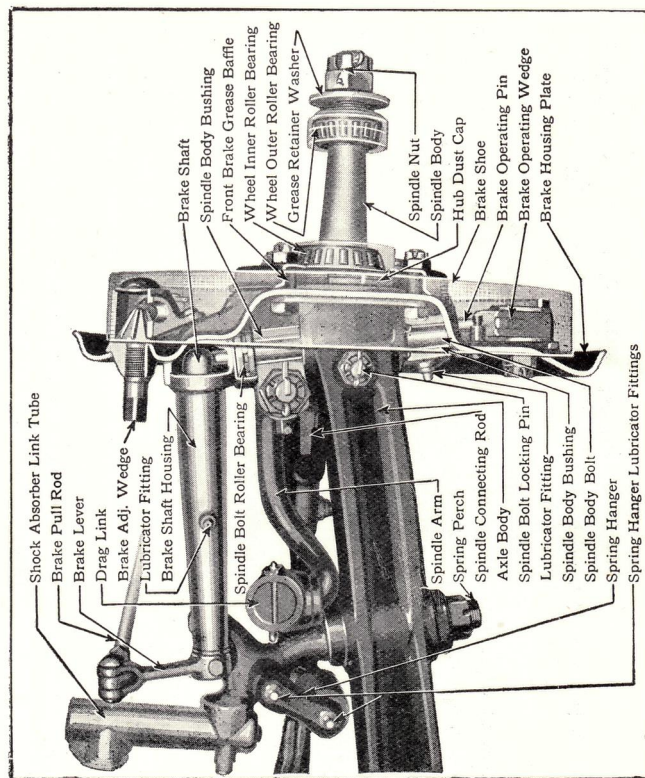


Figure 5
The Front Axle

The Front Axle

The front axle is a drop forging made in the form of an "H" section from alloy steel. It incorporates the three point suspension principle in which radius rods are used, holding the axle in perfect alignment with the frame, and relieving the springs of any brake torque and much of the road shock.

Fig. 5 illustrates the outer portion of the axle along with the spindle body and brake mechanism. The load is carried on a Timken roller bearing and the spindle body bolt supports the spindle body by two bronze bushings.

The spindle body bolt being hollow allows the brake operating pin to pass down through it to the brake shoe operating wedge, and in this way it is always centrally located so that the position of the wheels has no effect on the brake operation.

The front hub is mounted on two adjustable roller bearings. These should be removed, cleaned, greased and adjusted every five thousand miles as per oiling chart on pages 30 and 31.

Maintenance

The most important item of maintenance is to be sure that all moving parts are well supplied with lubricants, as per lubricating chart on pages 30 and 31.

It is very important that the front wheels have the correct amount of toe-in. This is $\frac{1}{8}$ to $\frac{3}{8}$ inches. Suggest that you have this checked occasionally by a Ford Dealer who is properly equipped to do this.

Periodically check bolts and nuts as it is essential that all parts be kept tight for safe driving.

The Cooling System

The Cooling System consists of:—

- The Radiator and Connections.
- The Water Jackets around cylinders and valves.
- The Water Pump and Connections.
- The Fan.

The function of the cooling system is to prevent damage to the working parts by counteracting the heat generated by explosions of fuel in the cylinders. In the Model "A" circulation of water is by Thermo-Syphon System and centrifugal water pump. Thermo-Syphon is simply the principle that hot water rises allowing cold water to take its place. Thus when the engine is started the water around the cylinders flows up to the upper radiator tank, down through the radiator where it is cooled by a rush of air and then into the cylinder jacket again. (See Fig. 7.) This circulation is assisted by the pump located in the cylinder head.

Cool air sucked in through the radiator and blown by the fan around the engine aids the cooling process.

By means of this cooling system, quick starting in cold weather and sufficiently cooling in warm weather are assured.

Care of Cooling System

1. Always keep the system full of water. It holds 2½ imperial gallons.
2. At regular intervals drain and flush the system. To do this open the drain cock in the bottom outlet pipe and run clean water in the filler tube until it flows out clear at the bottom. Then close the drain cock and fill the system. (See Fig. 7.)

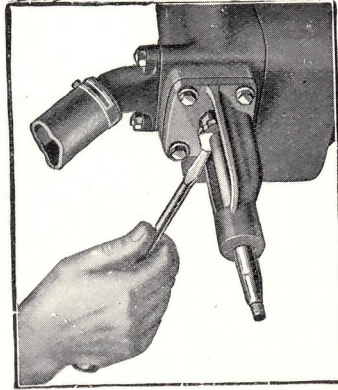


Figure 6

Tightening Water Pump Shaft Packing Nut

3. Regularly lubricate the water pump and fan shaft through the alemite fittings. (See Fig. 7.)
4. Regularly inspect water pump packing. Packing is used to form a water tight connection around the water pump shaft. Should a leak

occur at this point tighten the packing nut by turning to the right with a screw driver. (See Fig. 6.)

Do not tighten more than is necessary to stop the leak.

5. To adjust the fan belt—The "V" shaped belt which drives the fan from the crankshaft also drives the generator. (See Fig. 16.) Adjustment is made by loosening the generator mounting stud (see Fig. 16) and moving the generator. The fan belt is adjusted at the factory and should not be changed unless it is slipping. It should not be tightened more than sufficient to prevent this slippage.

Care of the Radiator in Freezing Weather

In freezing weather it is necessary to use an anti-freeze solution in the cooling system to prevent freezing and bursting of radiator tubes. Evaporation will eventually weaken most solutions, therefore they should be tested frequently, especially in severely cold weather.

We strongly recommend that you consult a Ford Dealer concerning suitable anti-freeze solution. He will also give you complete direction as to percentage of solution to be used to withstand the varying degrees of cold. Care should be used when filling the radiator not to spill any of the solution on the finish of the car, as damage may occur, particularly should the solution contain alcohol. After filling the radiator be sure the radiator cap is screwed down tightly.

Wood or denatured alcohol can be used to good advantage. The following tables give the freezing point of solution containing different percentages of alcohol:

20 per cent. solution alcohol, 10 per cent. glycerine, 70 per cent. water—freezes at 15 deg. above zero.

30 per cent. solution alcohol, 10 per cent. glycerine, 60 per cent. water—freezes at 8 deg. below zero.

50 per cent. solution alcohol, 10 per cent. glycerine, 40 per cent. water—freezes at 30 deg. below zero.

A solution composed of 60 per cent. water, 10 per cent. glycerine and 30 per cent. alcohol, is commonly used, if freezing point be about 8 deg. below zero.

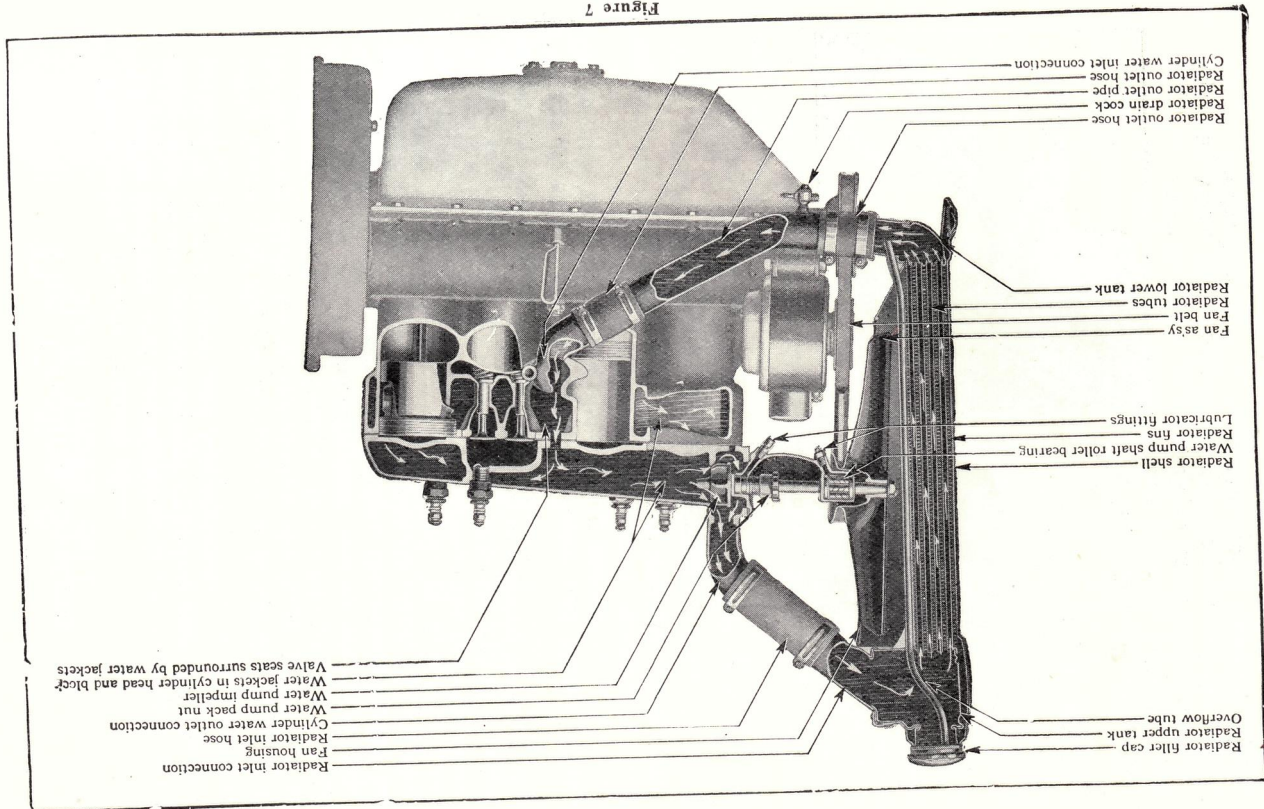


Figure 7
Cooling System

The Lubrication System

The Lubrication System consists of two parts:—

- (a) The engine lubrication system (Fig. 8).
- (b) The chassis lubrication system (Fig. 9).

Lubrication is one of the most important items in the life and satisfactory performance of your car. Lack of lubricant will result in friction and wear, perhaps the entire breakdown of the dry parts. Make it a point to lubricate every part of your car **REGULARLY**.

Engine Lubrication

The engine is lubricated by a combination of gravity and splash systems fed by an oil pump. For these systems to function properly, there must at all times be sufficient oil in the engine. Oil is poured in through the filler pipe on the left side of the engine, and its level is shown on the indicator located just behind the filler pipe. Oil should be kept up to the "F" on the indicator, and under no circumstances should it be allowed to get below the "L."

Only a high-grade medium oil should be used in the engine. Oil of this quality reaches the bearing surfaces more easily and has sufficient body to withstand the pressure between metal surfaces.

In cold weather a light grade of oil having a low cold test is essential for proper lubrication.

Heavy inferior oils have a tendency to carbonate quickly and gum up the piston rings, valve stems and bearings.

Periodically the crankcase should be drained and filled with fresh oil. Oil in time becomes diluted with petrol, filled with grit, and loses its body. Such oil is apt to do much harm to your engine. Adding fresh oil does no good in this case, as three quarts of bad oil plus one quart of good oil equals four quarts of bad oil.

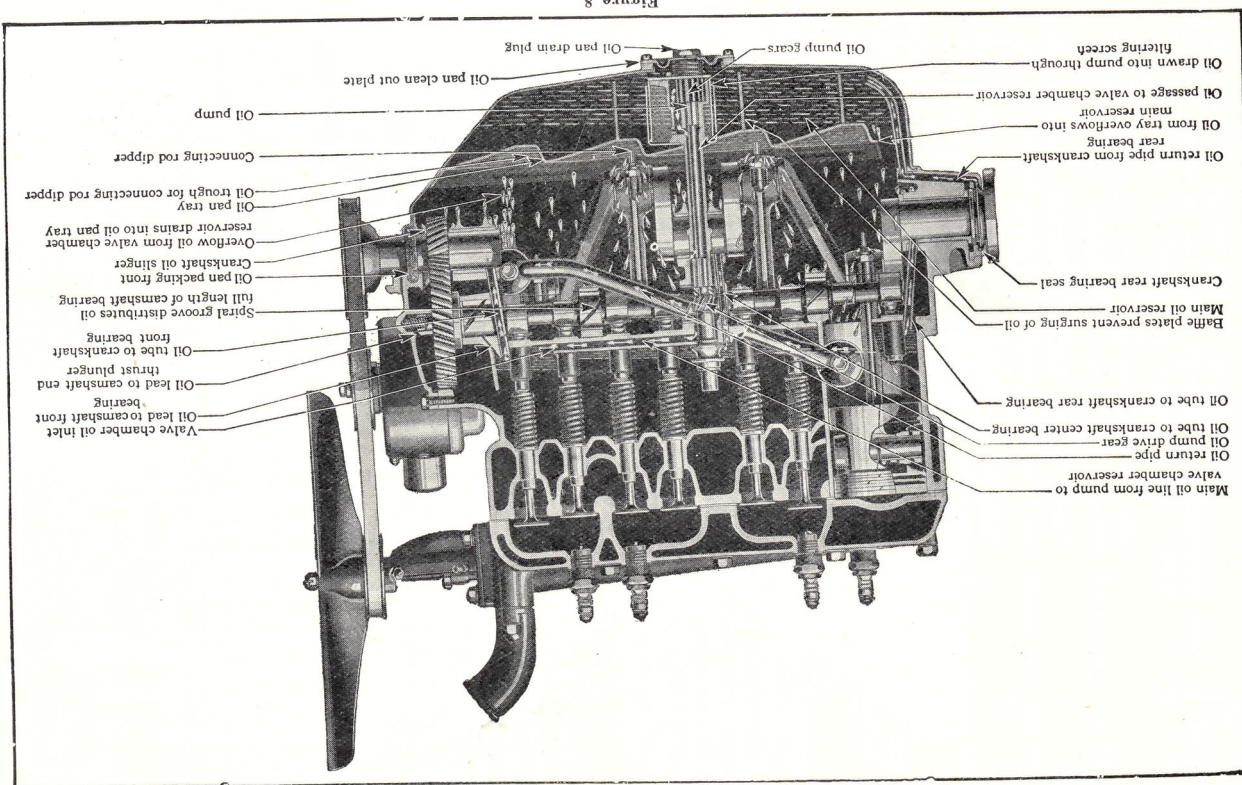
Drain off the old oil by removing the oil pan drain plug. (See Fig. 8.)

Be sure to replace the plug before filling with fresh oil.

IT IS IMPORTANT THAT THE OIL SHOULD BE CHANGED IN A NEW ENGINE WHEN IT HAS BEEN DRIVEN 500 MILES.

Oil should be warm before draining.

Sectional View of Engine showing Lubricating System
Figure 8



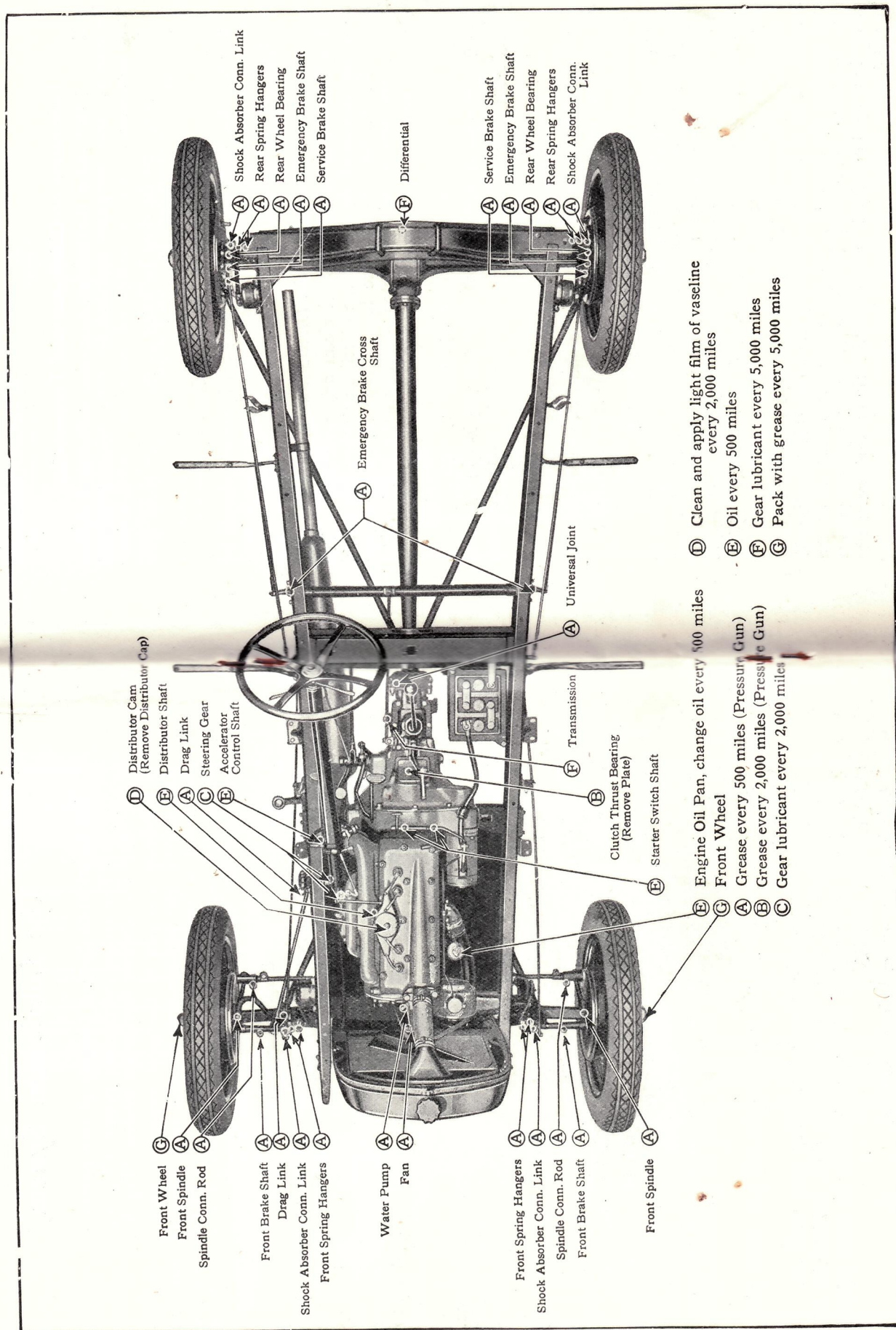


Figure 9—Oiling Chart

Lubrication of Differential and Transmission

Every 5,000 miles the transmission and differential should be drained and the gears and inside of the housing flushed with kerosene.

The housing should then be filled to the proper level with fresh lubricant.

Lubricating the Steering Gear

Every 2,000 miles special steering gear lubricant should be used in the steering column. This special lubricant is procurable from Ford Dealers everywhere.

Lubricating the Distributor

The distributor should be kept clean and well oiled. Put oil in the oil cup at the side of the distributor every 500 miles. Add sufficient oil to reach the level of the oil cup. Every 2,000 miles remove the distributor cap, clean the lobes of the cam and apply a light film of vaseline.

Lubricating the Springs

A graphite oil sprayed by pressure gun will keep springs in good order. Another plan is to stuff oil soaked waste between spring and cross member.

Lubricating the Front Wheels

Every 5,000 miles the front wheels should be removed and the bearings packed with grease.

Lubrication of the Clutch Bearing

The clutch pilot bearing at the front end of the clutch is thoroughly packed with grease when the car is assembled and it will not be necessary to lubricate this bearing until such time as the clutch may be removed. Whenever the clutch or transmission is removed, the bearings should be repacked with a good grade of cup grease.

Approximately every 2,000 miles lubricate the clutch thrust bearing. This is done by removing the hand hole (see Fig. 9) and turning the bearing until the lubricator fitting is at the top. Lubricate the bearing by means of the compressor grease gun. Note:—The clutch is a dry disc clutch and must not be oiled.

Greasing the Car

A high pressure system of lubrication is employed in order to properly lubricate all bearings equipped with a conical shaped fitting. By using this system we are assured of a more positive lubrication than can be employed any other way.

A compressor is supplied with the tool equipment of the car. By means of this compressor, lubricant can be forced into all bearings provided with the conical fitting.

Filling the Compressor

Remove the top cap and plunger assembly (see Fig. 10), fill the bell with lubricant, pack the lubricants solidly. To avoid air pockets, tap the nozzle gently on a board or block while filling. To prevent lubricant backing up and soiling the hands **FILL UP ONLY TO THE TOP OF THE LETTERING ON THE OUTSIDE OF THE BELL.**

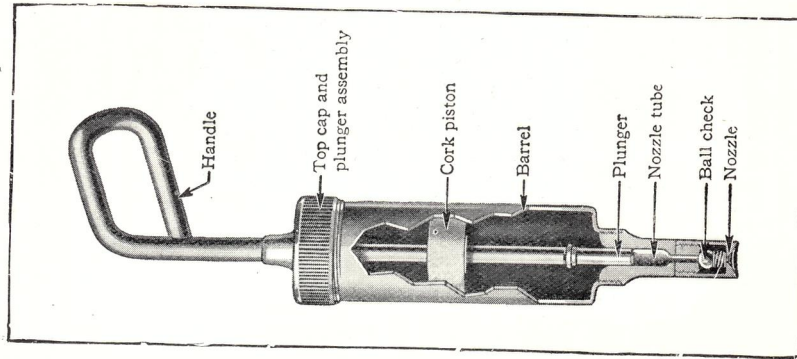


Figure 10
Compressor Lubricating Gun

Operating the Compressor

Pull plunger out. Wipe any dirt from conical shaped fitting and hold compressor squarely against it while shoving on handle with steady pressure. This forces the lubricant directly into the bearing at a high pressure. Each time handle is pulled back, nozzle is loaded for next bearing.

Generator and Starting Motor

The generator and starting motor are lubricated when they are installed in the car, and require no further attention.

The Fuel System

The Fuel System consists of:—

- The Fuel Tank, Sediment Bulb, and Connections.
- The Carburetter and Connections.
- The Intake Manifold.

The purpose of the fuel system is to supply a vapour of fuel and air to the cylinders where it is exploded to generate power.

Fuel is carried in a one-piece tank located in the cowl and separated from the engine by the steel dash. Fuel flows by gravity down the short feed lines to the carburetter, where it is mixed with air to form a vapour. On the intake stroke of the piston, this vapour is drawn into the cylinder, where it is compressed and then exploded by the spark at the spark plug points.

Care of the Fuel System

1. The fuel gauge on the instrument panel indicates the amount of fuel in the tank. This gauge, conveniently placed before the driver, should eliminate the inconvenience of running out of petrol.
2. Occasionally the sediment bulb should be drained by loosening the thumb screw at the bottom and allowing any water or dirt to drain off. (See Fig. 11.)
3. All connections in the fuel system should be kept tight, to prevent leakage and loss of fuel.
4. The carburetter:—
 - (a) Cleaning.—Occasional cleaning will ensure the best carburetter operation. Close the valve under the fuel tank, to prevent loss of fuel. Loosen the small nut and remove the carburetter strainer (see Fig. 11). Clean this strainer and replace, being sure to turn the nut up tight. It is a good plan to occasionally remove the drain plug at the bottom of the carburetter (see Fig. 12), and drain for a few seconds.
 - (b) Regulating Fuel Mixture.—The fuel mixture is regulated by the carburetter adjusting rod, the upper end of which is conveniently located for the driver. Turn—

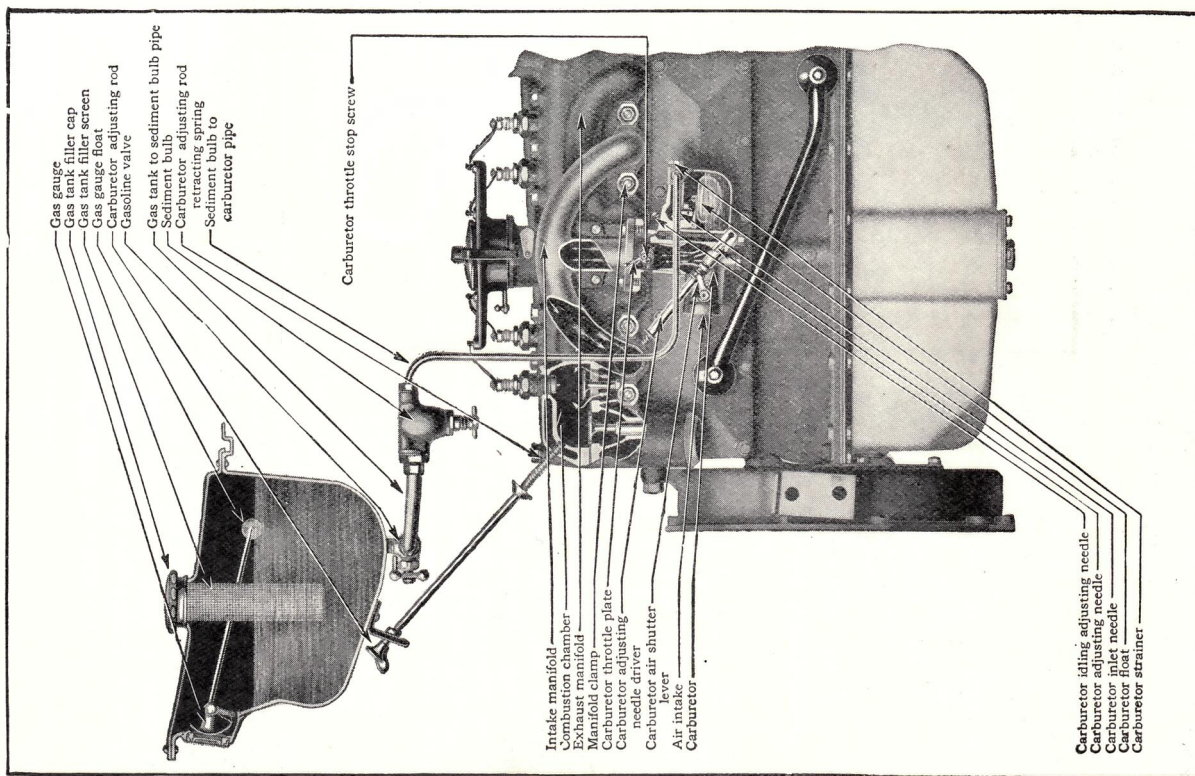


Figure 11
Fuel System

ing the adjustment to the right or clockwise results in a leaner mixture, and to the left, or anti-clockwise, in a richer mixture. (A lean mixture means a high ratio of air to the amount of fuel. A rich mixture means a high ratio of fuel to the amount of air.) Too rich a mixture causes excessive carbon and overheating, and is a waste of fuel. The mixture should be kept as lean as possible without reducing the power of the engine. This is particularly so when driving long distance which permits a fair speed being maintained.

- (c) Adjustment for Starting.—For starting the engine when cold, the adjustment should be one-half to a full turn open (i.e., to left, or anti-clockwise). The carburettor adjusting rod is also the choke rod, and, when pulled up, cuts off the air intake on the carburettor. When starting a cold engine, the choke should be pulled out for a few seconds while the starter is engaged. **DO NOT HOLD THE CHOKE LONGER THAN NECESSARY.**

When the engine has warmed up, the mixture can be made more lean by turning the adjustment to the right. An engine which is well run in can be operated with the adjustment almost closed. This is the most economical adjustment. When high speed or extreme power is desired, the adjustment should be opened about $\frac{3}{4}$ to $1\frac{1}{4}$ turn more than for normal operation.

- (d) To Set Idling Adjustment.—Fully retard the spark lever. Set the carburettor throttle stop screw (see Fig. 12) so that the engine will run sufficiently fast to keep from stalling. Turn the idling adjustment screw (see Fig. 12) in or out until the engine hits evenly without rolling or skipping. The correct setting of the idling adjustment screw is approximately 2 to 2½ turns from its seat. Next turn off stop screw until the exact engine idling speed is obtained. This adjustment should be made with the engine warm.

The Idling Adjustment cannot be satisfactorily made until the engine has been well run in, as it may not be possible to set the carburettor throttle stop screw far enough out.

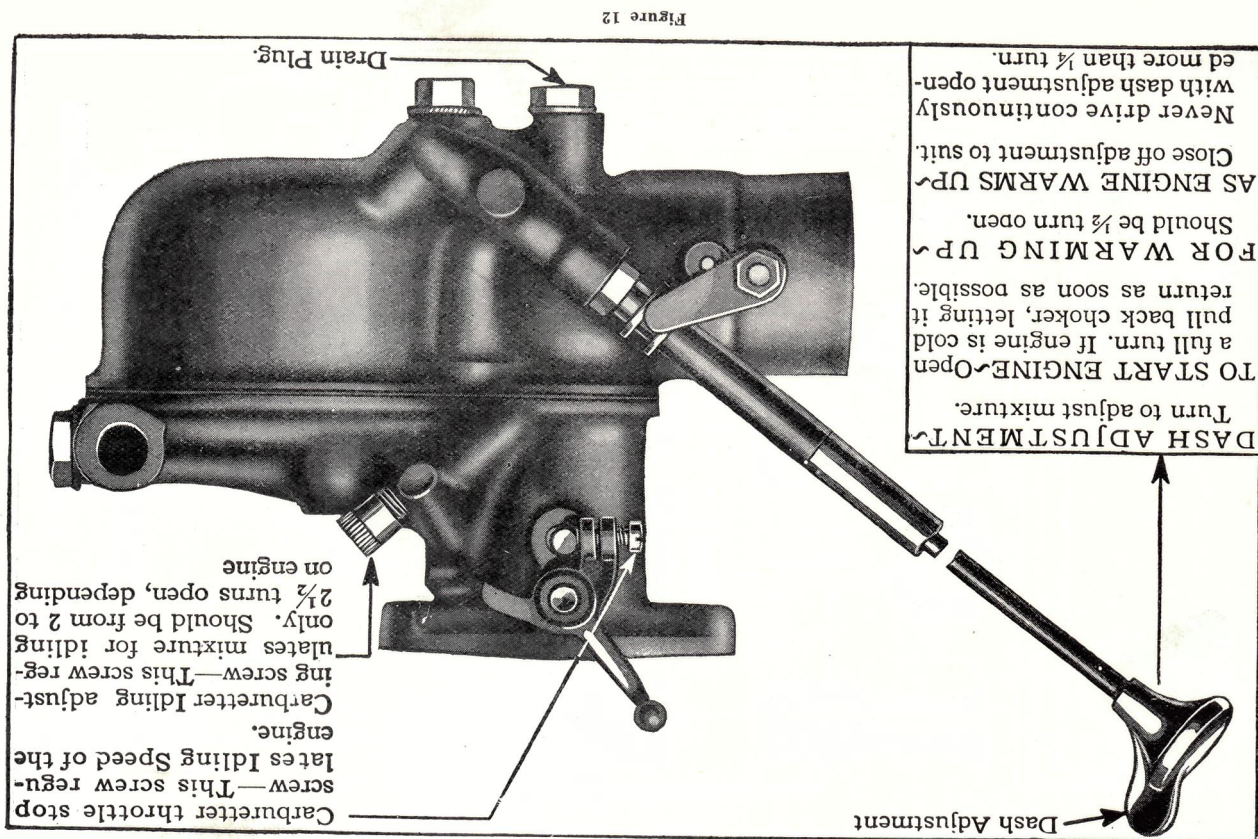


Figure 12

The Electrical System

The Electrical System consists of:—

- Storage Battery
- Generator
- Lights
- Ignition
- Starting Motor
- Horn
- Windshield Wiper
- Ammeter
- Switches and Wires.

The Storage Battery.

Through a simple system of wiring, the battery provides electric energy to operate all of the above units with the exception of the generator. Should any one of the units fail while the others function, obviously, the trouble will be in the unit rather than the battery, whereas if all the units fail simultaneously, the trouble is undoubtedly in the battery or connections.

If all battery connections are tight battery must be run down and needs recharging.

(See notes on "Care of the Battery," page 19.)

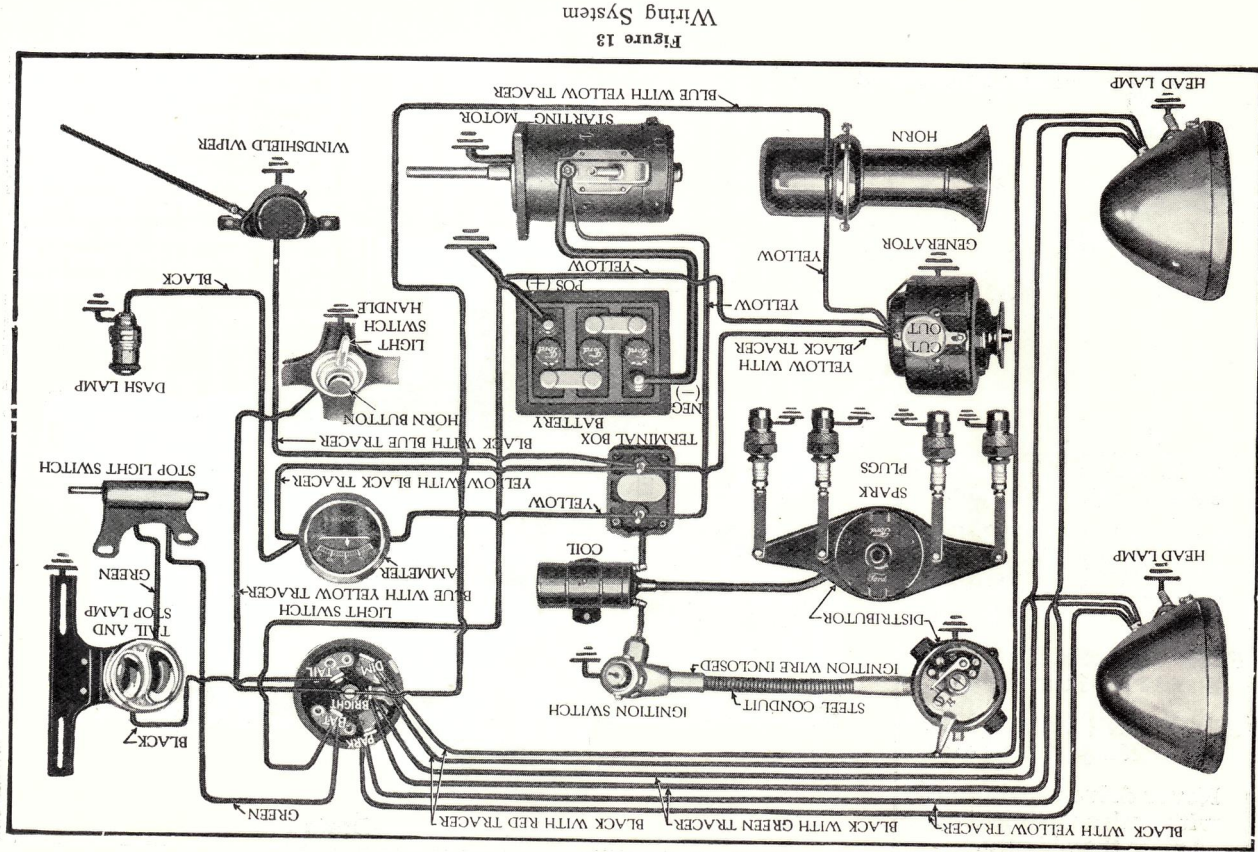
The Generator.

The generator, while the engine is running, provides current for all units, the excess flowing to the battery to keep it charged.

Ammeter.

The ammeter is placed in direct line between both the battery and the generator and all electrical units except the ignition, and indicates the amount of current flowing into those units.

For example, if the ammeter registers on the "charge" or right hand side 10 amperes at 20 to 25 miles per hour, 10 amperes are flowing from the generator to the battery. Suppose you turn on the lights, and the ammeter now registers a charging rate of 2 amperes. This indicates that the lighting circuit is drawing 8 amperes, and the flow into the battery is cut to 2 amperes. When the engine is not running, the ammeter registers the current being drawn from the battery. With lights off and the engine stopped, the ammeter should register zero.



Adjusting Breaker Contact Points.

The gap or space between the breaker contact points when the breaker arm is raised on the highest point of the cam is from .018in. to .022in. This should be checked occasionally to see that this clearance is maintained.

Should the points become burned or pitted, it will be necessary to rub them down squarely on an oil stone. (Do not use a file.)

To adjust the points, proceed as follows:—Remove the distributor cap rotor and body (see Fig. 15). Turn the engine over slowly with the starting crank until the breaker arm rests on one of the 4 high points of the cam (Fig. 14). Test, and, if gap is not correct, loosen locking screw and turn the contact screw until the gap measures .018in. to .022in. Standard thickness gauges are used for making the measurement.

Timing Ignition.

The spark must be timed to occur when the piston is on upper dead centre just after the compression stroke. Therefore check ignition timing at this point.

To determine this piston position and time spark—

1. Retard spark lever fully.
2. Check gap between contact points, and adjust, if necessary, as described above.
3. Screw out timing pin located in timing gear cover (see Fig. 16, page 42), and insert opposite end of pin into the hole from which it was removed.

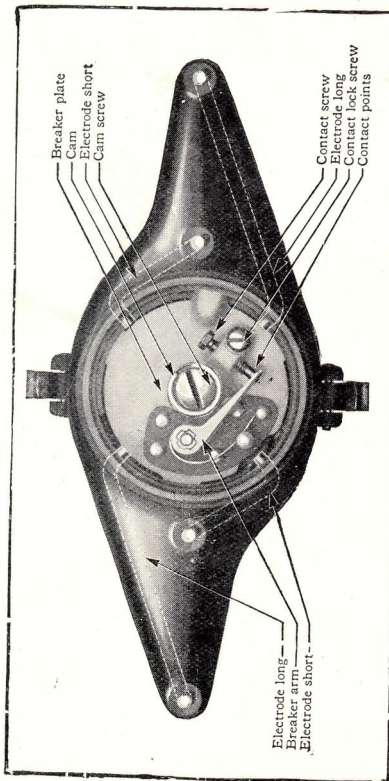


Figure 14
Top View of Distributor

4. Turn engine over slowly with starting crank, at the same time pressing in firmly on Timing Pin. When No. 1 Piston reaches upper dead centre after compression stroke, the end of the pin will slip into a recess in the cam shaft gear. **REPLACE TIMING PIN.**

5. Remove the Distributor cover and lift the rotor and distributor body.

6. Loosen cam locking screw (see Fig. 14) until cam can be turned.

7. Replace rotor and turn until rotor arm is opposite No. 1 contact point inside the Distributor body, i.e., the contact on the right hand front side.

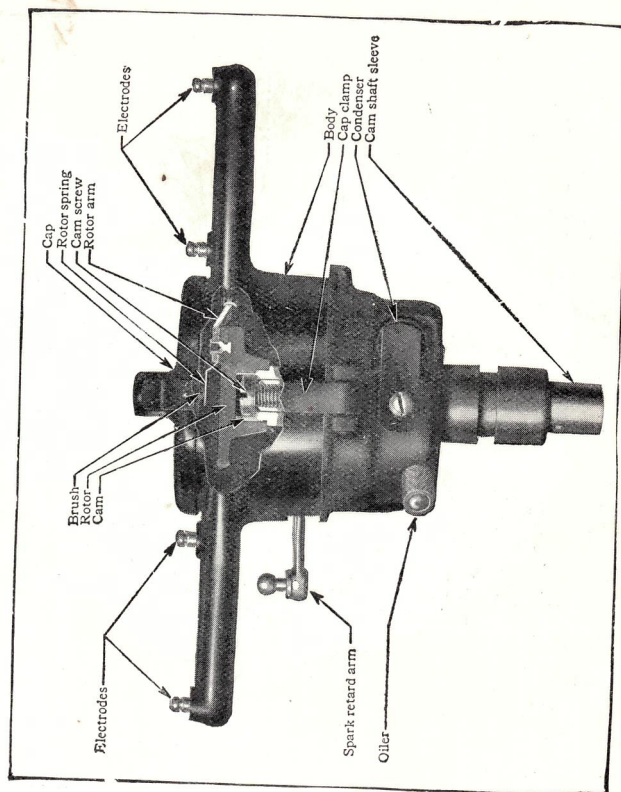


Figure 15
Side View of Distributor

8. Withdraw rotor from cam and slightly turn cam in a counter clockwise direction until the points just start to separate, then securely tighten locking screw.

9. Replace rotor and distributor body.

This adjustment should be made by a Ford dealer, and, in case this is not possible at the moment, have timing checked by a Ford Dealer at the earliest opportunity.

Increasing or Decreasing Generator Charging Rate.

To increase or decrease the generator charging rate, remove generator cover and loosen field brush holder lock screw. The field brush holder can be easily identified as it is the only one of the five brush holders that operates in a slot in the brush holder ring, and which is provided with a locking screw. The remainder of the brush holders are riveted to the ring and are not movable. To increase the charging rate, loosen the screw and move the brush holder in the direction of rotating; to reduce the rate, shift the brush in the opposite direction. The output of the generator is indicated by the ammeter located on the instrument panel.

The Starting Motor.

The starting motor is mounted on the left side of the engine. It requires no attention beyond seeing that the cable connection is clean and tight, and the starting switch operates freely.

The Ignition Coil.

The ignition coil mounted on the dash receives the low tension current from the battery, and transforms it into the high tension current necessary to produce the spark at spark plug. Occasionally inspect the wire connections at the coil, distributor and spark plugs to see that they are clean and tight.

The Spark Plugs.

The spark plugs are the medium through which the electric current ignites the petrol charge in the cylinder. Hard starting or misfiring of the engine may be caused by dirty spark plugs or incorrect spark plug gap. Keep the plugs clean and the gap set between .025 and .030.

There is nothing to be gained by experimenting with different makes of spark plugs. The spark plugs with which Ford engines are equipped when they leave the factory are best adapted to the requirements of the Ford engine.

Operation of the Lights.

The lighting system consists of a dash light, two head lamps, and a combination tail and stop light. The head lights and

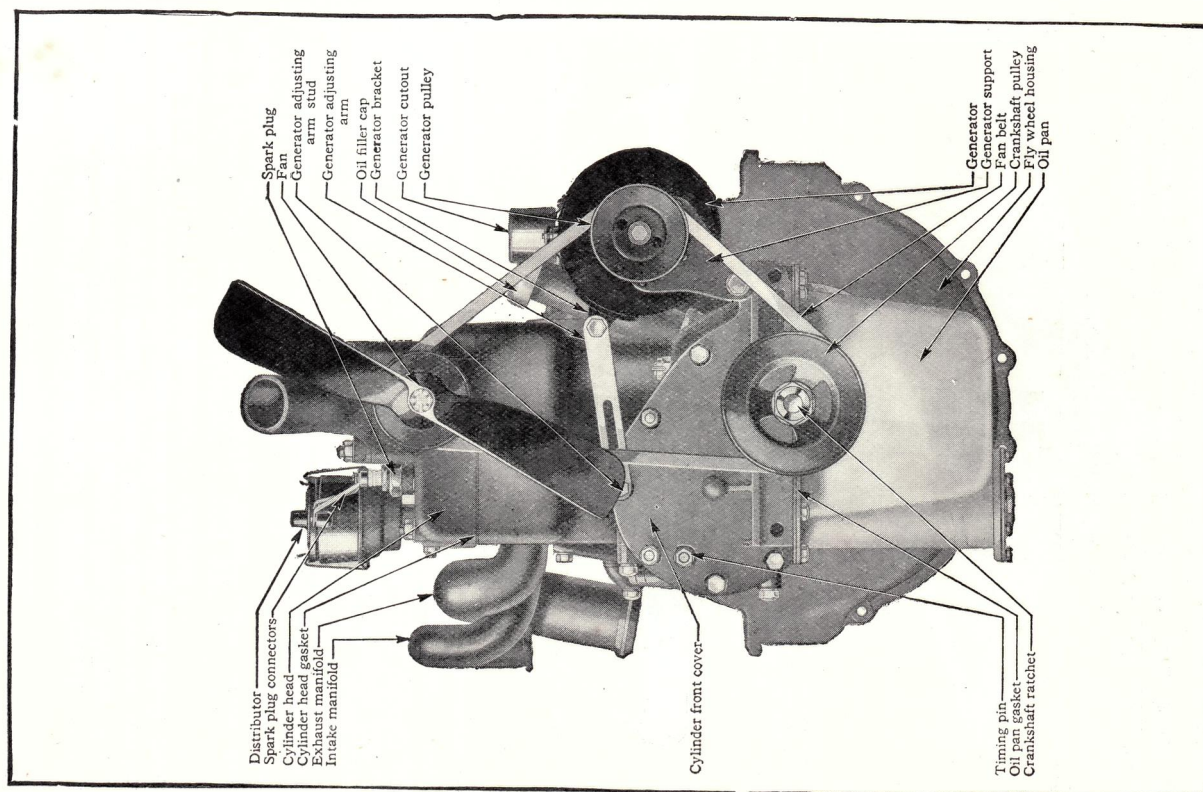


Figure 16

tail light are operated by a switch located at the top of the steering wheel. The headlamp bulbs are of the 6-8 volt, double filament gas filled type. The major filaments are 21 candle power, and the minor lamp is 3 candle power. The small bulb used in the tail light and the instrument panel light is of the 6-8 volt, single contact, three candle power type. The stop lamp bulb is a single contact, 21 c.p. bulb. All of the lamps are connected in parallel, so that the burning out or removal of any one of them will not affect the others. Current for the lamps is supplied by the battery.

Headlamp Requirements.

When the car is delivered, the headlamps are properly focused and aligned. Should the lamps get out of focus or alignment, they should immediately be refocused and realigned. Ford Dealers are equipped to do this work, or if you have the proper facilities you can make the adjustments.

Focusing and Aligning Headlamps.

Align and focus headlamps with the car empty, standing on a level surface in front of a white wall screen 25 feet from

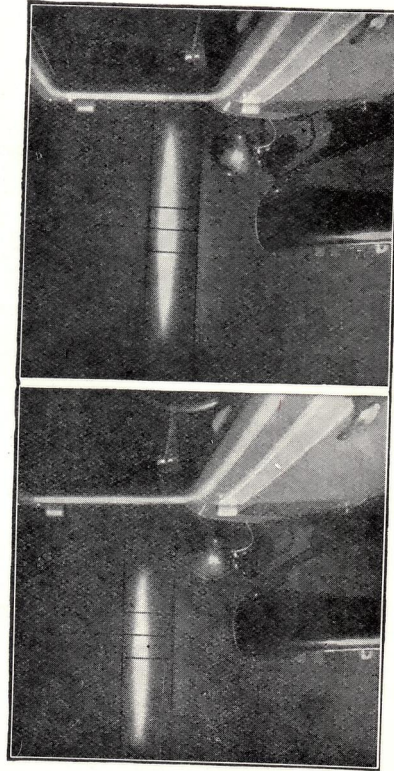


Figure 17
Left Headlamp Properly
Focused and Aligned

Figure 18
Both Headlamps Properly
Focused and Aligned

front of headlamps. This wall must be in semi-darkness or sufficiently shielded from direct light so that the light spots from the headlamps can be clearly seen. The wall must be marked off with black lines as shown in Figs. 17 and 18. Details for making the layout are shown in Fig. 19.

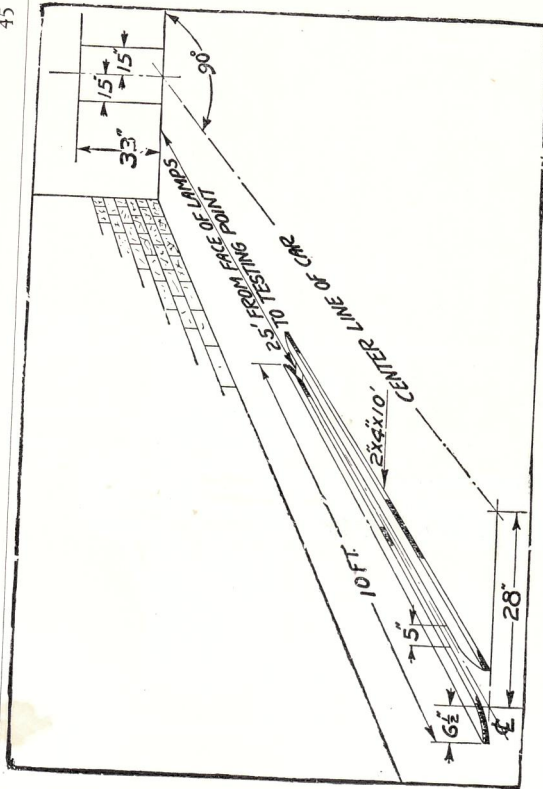


Figure 19
Layout for Focusing and Adjusting Headlamps

Focus.

Turn on high bright lights.

Focus by means of screw at back of lamps, keeping one lamp covered while focusing the other. Adjust the bulb filament at the focal centre of the reflector to obtain an elongated elliptical spot of light on the wall, with its long axis horizontal (see Fig. 17). In focusing, adjust the bulb to obtain as good contrast and as well-defined a cut-off across the top of the spot of light as possible.

With lamps thus focused for the "high" filament, the "low" will be in satisfactory position.

Alignment.

Loosen nut at the bottom of the bracket and tilt headlamps to the desired angle.

The tops of the bright spots on the 25-foot wall are to be set at a line 33 inches above level of surface on which the car stands. With top lines thus set for an empty car, the headlamps will also have the proper tilt under full loads.

The beam of light from each headlamp is to extend straight forward; that is, the centres of the elliptical spots of light must be 30 inches apart.

The Rear Axle

The axle is known as the three-quarter floating full torque tube drive, spiral bevel gear type. It is distinctly Ford design throughout and fully roller bearing equipped.

We mean by three-quarter floating that the weight of the car is carried by the axle housings, relieving the axle shaft from this strain.

The full torque tube relieves the springs of any driving or braking torque, and by the addition of rear radius rods, stabilizes the axle and keeps it in proper alignment with the frame. The wheels, differential, and drive shaft are fully mounted on roller bearings. This reduces friction to a minimum, and holds gear in perfect alignment and adjustment.

The only adjustment provided is of the drive pinion bearing. This adjustment is made before the drive shaft assembly is installed in the differential housing, and needs no further attention.

Maintenance

The only attention the axle requires is to periodically see that all bolts and nuts are tight, that it is supplied with the proper grade of lubricant, as per lubrication chart on pages 30 and 31. This oil should be changed every five thousand miles. A winter grade should be used in cold weather, and a summer grade used in warm weather.

It is equally important that the rear hub bearing and other alemite fittings be well lubricated, as per lubrication chart on pages 30 and 31.

At any time additional service is required we recommend that you consult a Ford Dealer, as he will be especially equipped to effect any repairs.

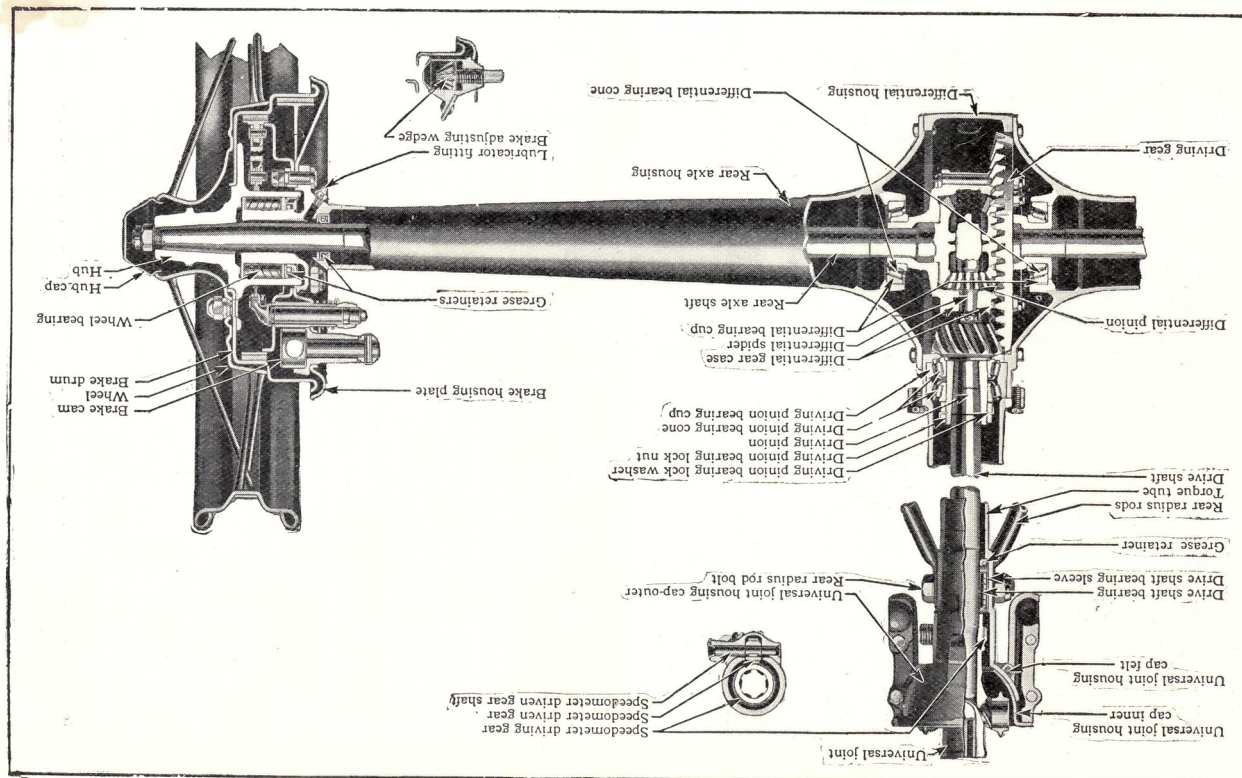


Figure 20
Rear Axle Assembly

The Running Gear

Care of Running Gear

Every few weeks, the front and rear axles should be carefully gone over to see that all nuts and connections are tight, with cotter pins in place. The spring clips should be inspected occasionally, to see that they are tight.

The Front Wheels

The front wheels should be jacked up periodically and tested for smoothness of running and excessive side play. To determine if there is excessive side play, grasp the sides of the tyre and shake the wheel. Do not mistake loose spindle bushings for loose bearings. Insert a cold chisel between spindle and axle when making this test to take up any spindle bushing play.

Adjusting Front Wheel Bearing

If there is excessive play in the bearing, it can be adjusted as follows: Remove wheel. Withdraw cotter key, and tighten adjusting nut until the hub just starts to bind. Then back off

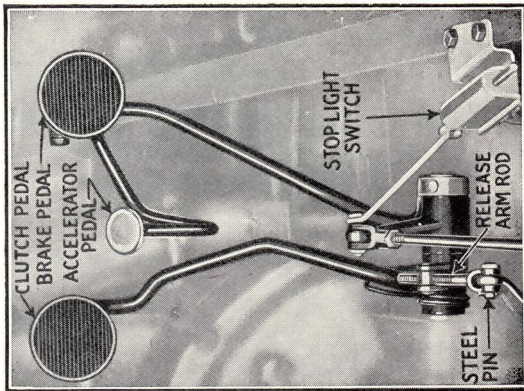


Figure 21

Clutch and Pedal Adjustment

the adjusting nut one or two notches until the hub can be freely revolved. Before replacing the wheel, **BE SURE TO INSERT COTTER KEY IN ADJUSTING NUT.**

Clutch Pedal Clearance

The clutch clearance or free clutch pedal movement is approximately one inch; that is, when the clutch pedal is being depressed, it should travel one inch before starting to disengage the clutch.

This free motion provides clearance between the clutch release fork, and, as the clutch facings wear, the clearance gradually decreases. For this reason, it should be checked occasionally, as under no circumstances should the car be driven without this clearance or free pedal movement.

Adjusting Clutch Pedal Clearance

The adjustment is made by removing the steel pin (see Fig. 21) and turning release arm rod. Turning the rod clockwise increases the clearance, or vice versa. Always be particular to replace the pin and secure firmly with the cotter key.

Speedometer

The speedometer with which your car is equipped indicates the speed and records the distance travelled. It also helps you in maintaining an accurate lubrication schedule.

Resetting the Trip Odometer

To reset the trip odometer simply pull out the knob on the speedometer. By turning the knob you can reset the figures at any tenth of a mile desired, or back to zero. After resetting the odometer, be sure to push the knob back to its original position.

Lubrication

The flexible shaft should be lubricated every 5,000 miles.

Care should be exercised not to bend the shaft in a radius smaller than 7 deg.

For maximum service we recommend that, every 10,000 miles, the speedometer is cleaned, lubricated and recalibrated. When this is necessary, or when repairs are required, consult an authorized Ford Dealer.

All speedometers are sealed when they leave the factory. Under no circumstances should this seal be broken or repairs attempted by the owner.

Steel Spoke Wheels and Tyres

Ford Steel Spoke Wheels

To remove Ford steel spoke wheels, jack up the side of the car from which the wheel is to be withdrawn, and screw off the five hub bolt nuts. The wheel can then be removed. When replacing the wheel, tighten each hub bolt nut a few turns at a time. Then follow around hub, tightening each nut firmly. If nuts are not drawn up evenly, the wheel will not run true.

Removing Tyres From Ford Steel Spoke Wheels (Drop Centre Rim)

Remove valve cap and lock nut, and place wheel so that valve is at the top. Let all air out of tube. Push valve stem up into tyre. Working both ways from the valve stem, press

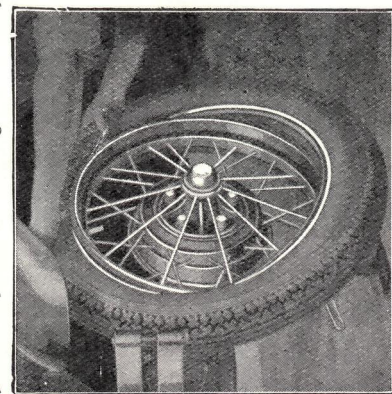


Figure 22
Mounting Tyre on Rim

the tyre together and down into the rim well, approximately one foot each side of the valve stem. Insert tyre iron under both beads at point opposite valve and force tyre over rim. The tyre can then be removed from the wheel with the hands.

Mounting Tyres on Ford Steel Spoke Wheels (Drop Centre Rim)

Inflate tube until it is barely rounded out, and insert tube in casing. If tyres

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tube to not more than two pounds pressure, and work casing back and forth to insure proper setting of tyre, indicated by red line on tyre being equally spaced from rim all way around (see Fig. 25). CAUTION: With Ford steel spoke wheels (drop centre rims), use only casing with red centring line just above red rim flange, and tubes marked "for drop centre rims."

It is particularly important that the red lines show an even distance from the rim all around on both sides before fully inflating tyre. Put

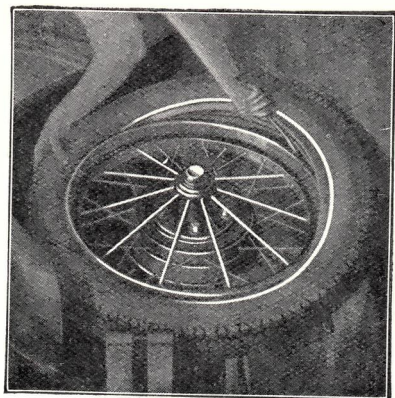


Figure 23
Installing Tyre

valve nut on valve, inflate tyre to 35 pounds and screw valve cap down tightly (see Fig. 25). With Ford steel spoke wheels, tyres can be more easily changed with wheel mounted on axle or tyre carrier than by laying the wheel on ground.

Keeping Tyres Inflated to 35 Pounds

Tyres should never be run partially inflated, as the side walls are unduly bent and the fabric is subjected to stresses which cause what is known as rim cutting. Keep both front and rear tyres inflated to 35 pounds, and check the pressure once a week.

Never run on a flat tyre, even for a short distance. Skidding also shortens the life of the tyres. Avoid locking the wheels with the brakes—no tyre will stand the strain of being dragged over the pavement. Avoid running in street car tracks, or bumping the sides of the tyre against the curbing.

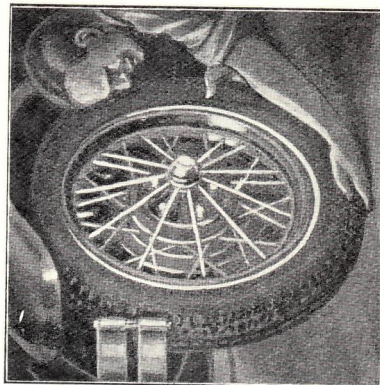


Figure 24
Centring Tyre on Rim

To get most service at least expense, tyres should be inspected frequently, and all small cuts or holes properly sealed or repaired, thus preventing dirt and water working in between the rubber tread and the fabric, causing blisters or sand holes.

Care of Tyres When Car Is Stored

When a car is idle for any appreciable length of time, it should be jacked up to take the load off the tyres. If the car is laid up for several months, it is best to remove the tyres. Wrap up the outer casings and inner tubes separately, and store them in a dark room not exposed to extreme temperatures. Remove oil or grease from the tyres with petrol.

NOTE: All tyres used on Model A cars are balanced. In placing the tube in the casing, always have the valve at the red mark on the casing.

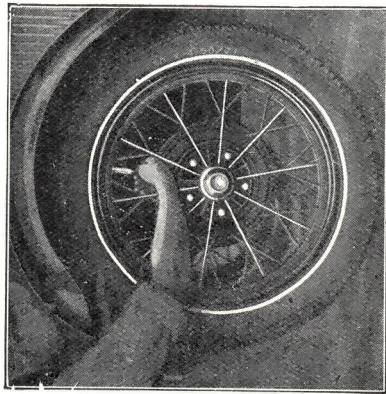


Figure 25
Red line on tyre must show even distance from rim all the way around the tyre

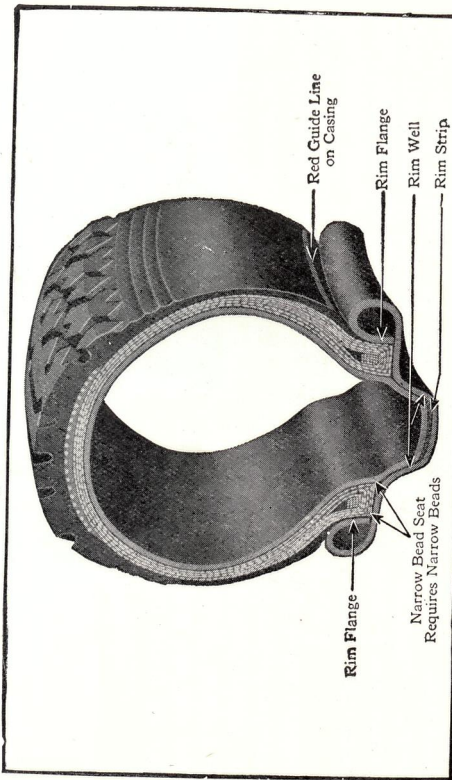


Figure 26
Sectional View of Tyre and Rim

Transmission and Clutch

The transmission is the standard three speeds forward, and one reverse. The gear shift is standard with very short lever movement for convenience of operation.

All moving parts, with the exception of the reverse idler gear, are ball and roller bearing mounted. This construction reduces friction and wear, keeping the gears in their proper alignment.

The universal joint is enclosed in its housing at the front of the torque tube, and fully protected from dirt. The universal joint speedometer gear and drive shaft front roller bearing are lubricated by an alemite fitting, as per lubrication chart, pages 30 and 31.

The clutch is a single drive plate type, with sufficiently large frictional surface to make a smooth, yet positive action. It requires no attention except to see that the clutch pedal has one inch free travel before it starts to disengage the clutch. See page 49, Clutch Pedal Clearance.

Maintenance

The main drive gear pilot bearing on the inside of the flywheel requires no lubricant other than that supplied when assembled. The clutch thrust bearing should be greased each two thousand miles. This is accomplished by removing the metal plate just ahead of the gear shifter lever in the floor boards. Then remove the clutch housing hand hole cover, and the bearing and oiler will be found located directly under the opening.

Be sure the transmission has a sufficient supply of lubricant; i.e., up to the level of the filler plug on the right hand side transmission case. This oil should be replaced every five thousand miles, using a winter grade during cold weather, and a summer grade during warm weather.

In shifting gears, grasp gear shifter lever with a loose comfortable grip, and practise shifting until you can automatically shift from one gear to the other without making a noise, as the noise heard in shifting is caused by the edges of the teeth rubbing one on the other. This, in time, will wear them away until the gears will not stay in mesh.

Gear Ratio

High Gear, 3.77 to 1.	Low Gear, 11.76 to 1.
Intermediate Gear, 7 to 1.	Reverse Gear, 13.84 to 1.

Brakes

The braking system includes four internal expanding service brakes, one on each wheel, and an emergency or parking brake on each rear wheel which is also an expanding brake. This design is made possible by specially developed two in one brake drums on the rear wheels.

The four wheel service brakes are operated by the foot brake pedal. The emergency brakes are operated by the emergency brake lever, and are entirely separate from the four wheel service brakes.

Both sets of brakes are of the mechanically operated design and of simple construction, ensuring positive action and highest efficiency at all times.

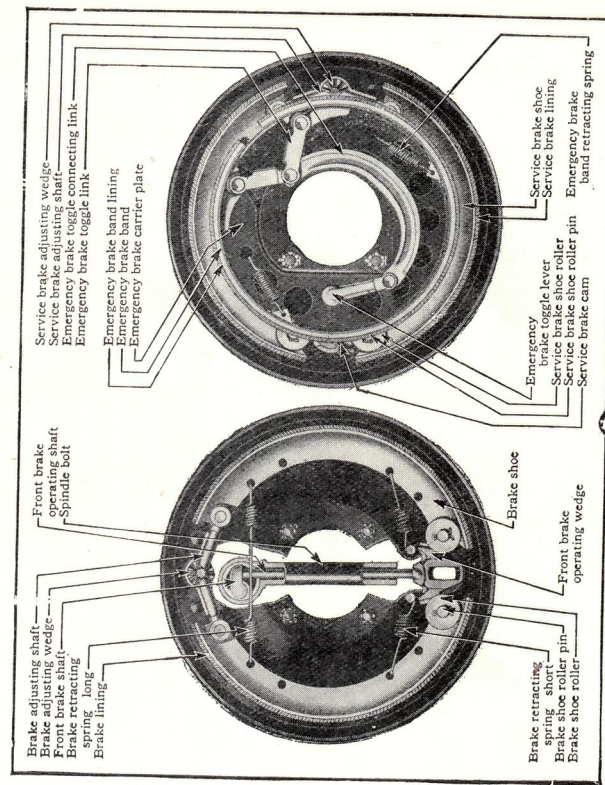
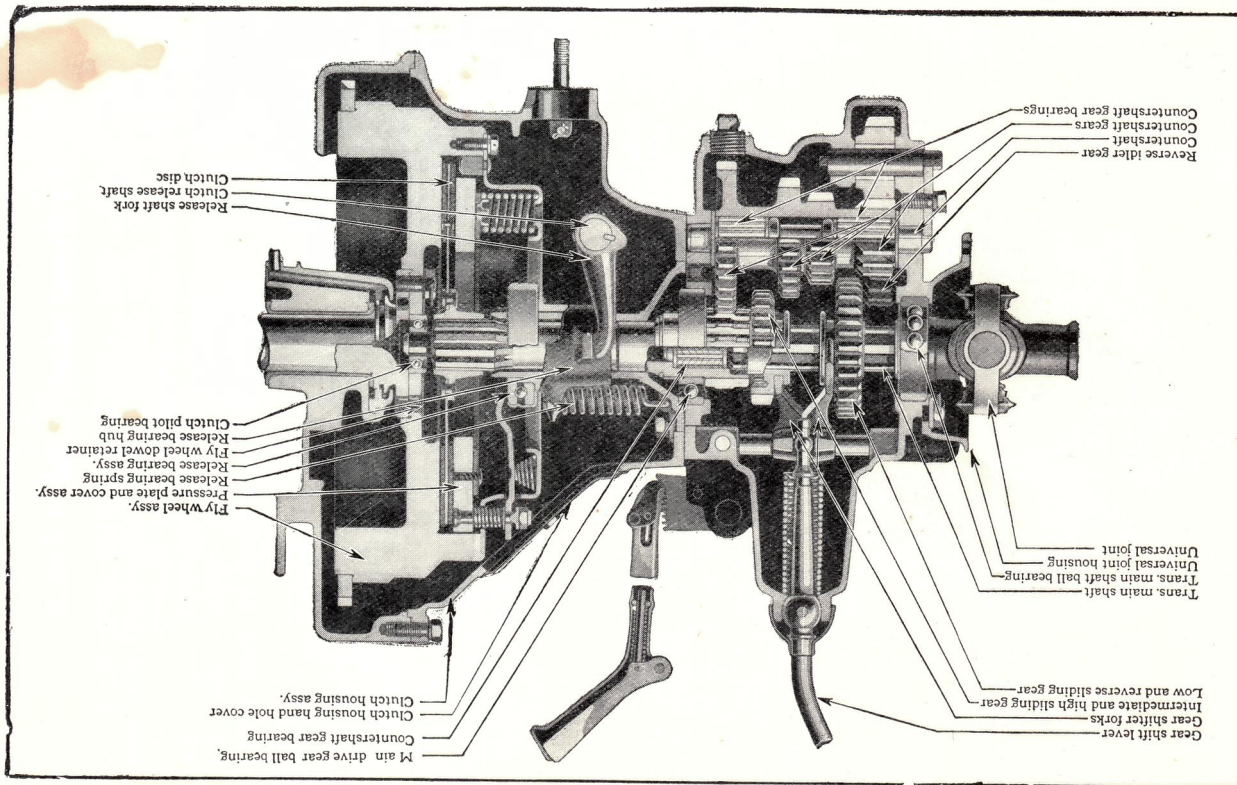


Figure 28

Front Brake

Rear Brake

Figure 27
Transmission and Clutch



Adjusting Four Wheel Service Brakes

Make all adjustments with brakes cold. Fully release emergency brake lever.

Raise rear end of car sufficiently to allow wheels to spin free from floor.

Turn adjusting wedge at both rear brakes until the brake drags them back off the wedge two or three notches or just enough to allow the wheels to revolve without drag.

To ensure correct equalisation, the same person should check the brake pressure by rotating the wheel.

After adjusting rear brakes, adjust the front brakes in the same manner.

If adjustments are correctly made, the brakes should operate as follows:—

1. Rear brakes should just start to hold when brake pedal is depressed approximately 1 inch.
2. Depressing pedal about $\frac{3}{4}$ inch farther should tighten but not lock rear brakes and cause front brakes to just start to hold.
3. Depressing pedal approximately another $\frac{1}{2}$ inch should lock rear wheels and hold the fronts very tightly. With properly adjusted brakes this should not exceed one-half of the total possible pedal movement.

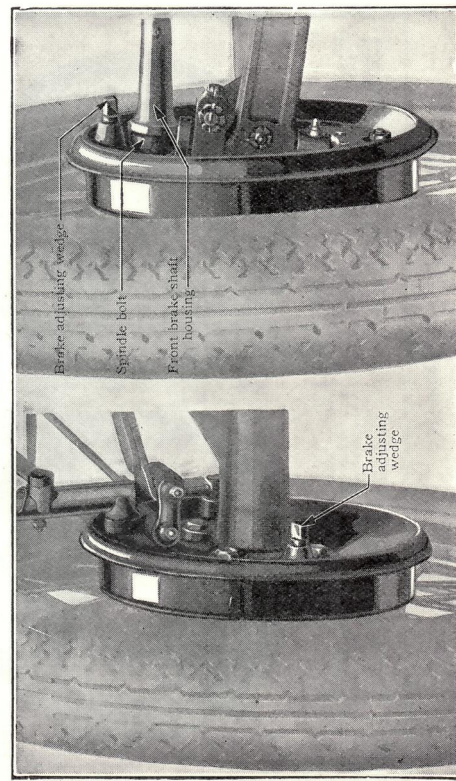


Figure 29

4. When brake pedal is applied with full pressure, rear wheels should slide and fronts should make a heavy impression or road print, which condition is obtained just before sliding.

When all of the adjustment on the adjusting wedges is used up, it will be necessary to reline the brakes. When this becomes necessary, we suggest you take your car to an authorized Ford Dealer. They are provided with special relining equipment.

Adjusting Emergency Brakes

The emergency brake requires little attention from an adjustment or service standpoint, and with ordinary care will last indefinitely. Only when the band lining becomes excessively worn, permitting the emergency brake lever to come back to the extreme rearward position, will adjustment be required for wear. When this occurs, adjustment can be easily made as follows:—

1. Fully release emergency brake lever.
2. Remove rod that connects emergency brake lever to cross shaft centre lever.
3. Next replace the rod, inserting it through hole in centre cross member and connecting the rod to the cross shaft centre lever through UPPER hole in lever.

Never adjust for wear by shortening the pull rods.

Summary of Engine Troubles and Their Causes

Engine Fails to Start

If starter turns engine over freely, check the following:—
Ignition switch.

Petrol tank empty or supply shut off.

If engine is cold, mixture may not be rich enough—choke button not pulled back. See starting instructions, page 10.

Warm engine—over choking. See page 11.

Breaker points too close. The correct adjustment is .018 in. to .022 in.

Spark plug gap too wide. Correct gap .025 in. to .030 in.

Water in sediment bulb or carburetter. See instructions on page 35.

Starter Fails to Turn Engine Over

Battery run down. A quick way to check this is to turn on the lights, and depress the starter switch. If the battery is weak, the lights will go out or grow quite dim. If the battery is run down, have it recharged.

Loose or dirty battery connections.—See that both the negative and positive battery terminal connections are clean and tight. These connections should be checked regularly.

Missing at Low Speed

Petrol mixture too rich or too lean. See carburetter adjustment on page 33.

Too close a gap between spark plug points. The correct gap is .025 in. to .030 in.

Breaker points improperly adjusted, badly burnt or pitted. See adjusting breaker contact points, page 40.

Fouled spark plug. Plugs should occasionally be cleaned and the gaps checked.

Water in petrol. See instruction on cleaning sediment bulb and carburetter, page 35.

Missing at High Speed

Insufficient petrol flowing to carburetter, due to petrol line or filter screen being partly clogged.

Petrol mixture too rich or too lean. See carburetter adjustment instructions, page 36.

Water in petrol. Drain sediment bulb and carburetter as described on page 35.

Engine Stops Suddenly

Petrol tank empty.

Dirt in fuel line or carburetter. See instructions on page 35.

Petrol mixture too lean. See adjustment of carburetter, page 36. Ignition switch not working properly.

Engine Overheats

Lack of water—radiator should be kept well filled.

Lack of oil—check oil level as described on page 9.

Fan belt loose or slipping. See fan belt adjustment, page 27.

Carbon deposit on piston heads and in combustion chamber. This can be corrected by taking off the cylinder head and removing the carbon. (Ford dealers are equipped for this work.)

Incorrect spark timing. See ignition timing, page 40.

Petrol mixture too rich. See adjustment of carburetter, page 36.

Water circulation retarded by sediment in radiator. (See Cleaning the Radiator, page 25.)

Engine Knocks

Carbon knock—caused by a deposit of carbon in combustion chamber and on piston heads. Take off cylinder head and remove carbon.

Ignition knock.—If this occurs under ordinary driving conditions, check ignition timing, page 40.

Engine overheats. Check conditions listed under "Engine Overheats."

Loose bearing.—If a bearing has become loose, it should be adjusted by an authorized Ford mechanic.

Do not mistake an ignition knock for a loose bearing. Ignition knocks usually occur when the car is suddenly accelerated, or when ascending steep grades or travelling through heavy sand with the spark lever full advanced. Slightly retarding the spark lever eliminates the knock. The spark should be advanced as soon as normal road conditions are encountered.

Have Your New Model A or AA Serviced by an

AUTHORIZED FORD DEALER

The Model A is a new car. Many new principles and original ideas of design are embodied in its manufacture. It is built to extremely close limits, many of the parts fitting to within one-thousandth of an inch (.001 in.), or one-third the thickness of a human hair.

The construction of the Model A is simple and understandable, but to maintain its remarkably efficient and economical operation, any repairs or adjustments necessary should be made by mechanics specially trained in Model A service, with the proper equipment for the purpose.

Ford dealers and mechanics have been specially trained in this work, and have the machines and other equipment essential to proper Model A service.

They have studied every part of the car in special service courses conducted by Ford Motor Company.

They have worked on Model A service ever since the Model A was placed on the market.

And they depend for their living upon the satisfaction rendered by Model A cars to their owners.

It is logical, therefore, that the **AUTHORIZED FORD DEALERS'** service should be the best Model A service obtainable.

Use Only Genuine Ford Parts

To repair a car so that it will be restored to its original condition, parts identical in precision of manufacture and quality of material with original parts must be used. Only **GENUINE FORD PARTS** are identical with the original parts in your car. To ensure satisfactory operation, always insist on **GENUINE FORD PARTS**.

